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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,968	10/31/2003	Hiap L. Ong	0717.2038-001	8812
21005	7590	06/29/2005	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			DI GRAZIO, JEANNE A	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,968

Applicant(s)

ONG, HIAP L.

Examiner

Jeanne A. Di Grazio

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

Priority to U.S. Provisional Application No. 60/423,621 (Nov. 1, 2002) is claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent Application No. US 2002/0047971 A1 (to Kwon et al.)(Filed: October 4, 2001).

As to claim 1, Kwon is drawn to a pixel structure for a multi-domain vertical alignment mode (MVA) liquid crystal display and manufacturing method. Figure 4A (Second Embodiment) shows a multi-domain display in which the slit pattern of a pixel electrode (48) induces the fringe field effect thereby inducing the multi-domain alignment (Please see Page 4 at [0069])(Applicant's "a liquid crystal display device having a fringe field associated with each pixel being substantially used to control the liquid crystal tilt direction to create multi-domain vertical alignment display").

As to claim 12, the Kwon application is drawn to a color, active matrix device (entire patent).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application No. US 2002/0047971 A1 (to Kwon et al.)(Filed: October 4, 2001) in view of United States Patent Application No. 2002/0080312 A1 (to Yamaguchi et al.)(Filed: July 26, 2001).

As to claims 2-5 and 14-17, Kwon does not appear to explicitly specify driving methods for the creation of the multi-domain profile.

However, Yamaguchi is drawn to a multi-domain vertical alignment mode liquid crystal display in which a driving substrate is used to create the multi-domain effect (Abstract and entire patent). The device and driving substrate contribute to a display having a wide viewing angle without lowering the effective aperture ratio [0007].

It would have been obvious to one of ordinary skill in the art of MVA liquid crystal displays at the time the invention was made to modify Kwon in view of Yamaguchi for a wide viewing angle without lowering the effective aperture ratio [0007].

Art Unit: 2871

Claims 6-8, 18-21, 31-33 and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application No. US 2002/0047971 A1 (to Kwon et al.)(Filed: October 4, 2001) in view of United States Patent Application No. 2002/0080312 A1 (to Yamaguchi et al.)(Filed: July 26, 2001) and further in view of United States Patent Application No. US 2002/0093618 A1 (to Wu et al.)(Filed: January 23, 2001).

As to claims 6-8, 18-21, 31-33 and 43-46, Kwon does not appear to explicitly specify boundary lines to reduce or eliminate the fringe field from extending into neighboring pixels and a reference voltage maintained at ground potential.

Wu is drawn to a multi-domain vertical alignment mode liquid crystal display in which the pixel structure is configured in such a way to improve domain boundary [0013].

It would have been obvious to one of ordinary skill in the art of MVA liquid crystal displays at the time the invention was made to modify Kwon in view of Wu to improve domain boundary [0013].

Claims 9-11, 22-24, 34-36 and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application No. US 2002/0047971 A1 (to Kwon et al.)(Filed: October 4, 2001) in view of United States Patent Application No. 2002/0080312 A1 (to Yamaguchi et al.)(Filed: July 26, 2001) and further in view of United States Patent 5,528,400 (to Arakawa).

As to claims 9-11, 22-24, 34-36 and 47-49, Kwon does not appear to explicitly specify an optical compensation film of negative birefringence anisotropic type that is uniaxial or biaxial.

However, Arakawa teaches such a compensator in a liquid crystal display device to improve (enlarge) the viewing angle (Abstract and Column 2, Lines 45-49).

It would have been obvious to one of ordinary skill in the art of MVA liquid crystal displays and optical compensation films at the time the invention was made to modify Kwon in view of Arakawa for an enlarged viewing angle.

Claims 13 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application No. US 2002/0047971 A1 (to Kwon et al.)(Filed: October 4, 2001).

As to claims 13 and 25, the method of creating a multi-domain vertical alignment display would have been obvious to one of ordinary skill in the art of MVA liquid crystal displays at the time the invention was made in view of the structure as taught and disclosed in Kwon.

Claims 26-30, 37, 38-42, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application No. US 2002/0047971 A1 (to Kwon et al.)(Filed: October 4, 2001) in view of United States Patent Application No. 2002/0080312 A1 (to Yamaguchi et al.)(Filed: July 26, 2001).

As to claims 26-30 and 37, Kwon is drawn to a pixel structure for a multi-domain vertical alignment mode (MVA) liquid crystal display and manufacturing method. Figure 4A (Second Embodiment) shows a multi-domain display in which the slit pattern of a pixel electrode (48) induces the fringe field effect thereby inducing the multi-domain alignment (Please see Page 4 at [0069]). Kwon has a first substrate and a second substrate (42 and 47), a plurality of pixels (though one pixel is illustrated)(pixel 48) and liquid crystal material (46) between the substrates. Kwon is drawn to a color, active matrix display.

Kwon does not appear to explicitly specify driving methods for the creation of the multi-domain profile.

However, Yamaguchi is drawn to a multi-domain vertical alignment mode liquid crystal display in which a driving substrate is used to create the multi-domain effect (Abstract and entire patent). The device and driving substrate contribute to a display having a wide viewing angle without lowering the effective aperture ratio [0007].

It would have been obvious to one of ordinary skill in the art of MVA liquid crystal displays at the time the invention was made to modify Kwon in view of Yamaguchi for a wide viewing angle without lowering the effective aperture ratio [0007].

As to claims 38-42, 50 and 51, the method of creating a multi-domain vertical alignment display would have been obvious to one of ordinary skill in the art of MVA liquid crystal displays at the time the invention was made in view of the structure as taught and disclosed in Kwon in view of Yamaguchi.

Art Unit: 2871

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio
Patent Examiner
Art Unit 2871

JDG



NG T. NGUYEN
PRIMARY EXAMINER